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**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In the **PATENT APPLICATION** of:

Terry et al.

**Application No.:** 10/616,331

**Confirmation No.:** 1330

**Filed:** July 9, 2003

**For:** SYSTEM FOR EFFICIENT  
RECOVERY OF NODE-B BUFFERED  
DATA FOLLOWING MAC LAYER RESET

**Group:** 2681

**Examiner:** Not Yet Known

Our File: I-2-0409.1US

Date: July 16, 2004

**COMMUNICATION RE FAVORABLE IPER BY  
IPEA/US IN CORRESPONDING INTERNATIONAL APPLICATION**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This communication is to advise the Examiner of the favorable International Preliminary Examination Report (IPER) issued by the United States Patent and Trademark Office acting as International Preliminary Examination Authority in a corresponding international application. A copy of the IPER is enclosed.

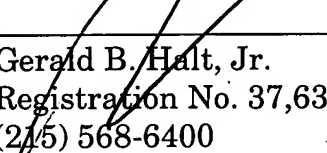
The original PCT claims correspond to the claims in this U.S. application. A copy of the approved claims as published is also enclosed.

**Applicant:** Terry et al.  
**Application No.:** 10/616,331

In view of the fact that PCT claims 1-27 have all been found to meet the international standards of patentability, prompt examination and allowance are respectfully requested.

Respectfully submitted,

Terry et al.

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GBH/kag  
Enclosures (2)

# PATENT COOPERATION TREATY

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AM/PM

JUN 23 2004

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

VOLPE & KOENIG, P.C.

To:  
JOHN C. DONCH, JR.  
VOLPE AND KOENIG, P.C.  
UNITED PLAZA, SUITE 1600  
30 S. 17TH STREET  
PHILADELPHIA, PA 19103

## PCT

### NOTIFICATION OF TRANSMITTAL OF INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Rule 71.1)

Date of Mailing (day/month/year)	21 JUN 2004
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Applicant's or agent's file reference

I-2-0409.1WO

#### IMPORTANT NOTIFICATION

International application No.

PCT/US03/28360

International filing date (day/month/year)

10 September 2003 (10.09.2003)

Priority date (day/month/year)

12 September 2002 (12.09.2002)

Applicant

INTERDIGITAL TECHNOLOGY CORPORATION

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices)(Article 39(1))(see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/US  
Mail Stop PCT, Attn: IPEA/US  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
Facsimile No: (703)305-3230

Authorized officer

Toan Nguyen

Telephone No. 703-305-9600

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

RECEIVED  
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JUN 23 2004

VOLPE &amp; KOENIG, P.C.

Applicant's or agent's file reference I-2-0409.1WO	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US03/28360	International filing date (day/month/year) 10 September 2003 (10.09.2003)	Priority date (day/month/year) 12 September 2002 (12.09.2002)
International Patent Classification (IPC) or national classification and IPC IPC(7): H04L 12/56; H04Q 7/00 and US Cl.: 370/331, 338, 394, 401, 412, 429		
Applicant INTERDIGITAL TECHNOLOGY CORPORATION		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>3</u> sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of <u>0</u> sheets.</p> <p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"><li>I <input checked="" type="checkbox"/> Basis of the report</li><li>II <input type="checkbox"/> Priority</li><li>III <input type="checkbox"/> Non-establishment of report with regard to novelty, inventive step and industrial applicability</li><li>IV <input type="checkbox"/> Lack of unity of invention</li><li>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li><li>VI <input type="checkbox"/> Certain documents cited</li><li>VII <input type="checkbox"/> Certain defects in the international application</li><li>VIII <input type="checkbox"/> Certain observations on the international application</li></ul>		
Date of submission of the demand 12 April 2004 (12.04.2004)	Date of completion of this report 07 June 2004 (07.06.2004)	
Name and mailing address of the IPEA/US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703)305-3230	Authorized officer Toan Nguyen Telephone No. 703-305-9600	

Form PCT/IPEA/409 (cover sheet)(July 1998)

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US03/28360

**I. Basis of the report**

## 1. With regard to the elements of the international application:\*

- ☒ the international application as originally filed.
- ☒ the description:  
pages 1-10 as originally filed  
pages NONE, filed with the demand  
pages NONE, filed with the letter of \_\_\_\_\_.
- ☒ the claims:  
pages 11-14 as originally filed  
pages NONE, as amended (together with any statement) under Article 19  
pages NONE, filed with the demand  
pages NONE, filed with the letter of \_\_\_\_\_.
- ☒ the drawings:  
pages 1-4 as originally filed  
pages NONE, filed with the demand  
pages NONE, filed with the letter of \_\_\_\_\_.
- ☐ the sequence listing part of the description:  
pages NONE as originally filed  
pages NONE, filed with the demand  
pages NONE, filed with the letter of \_\_\_\_\_.

## 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☒ The amendments have resulted in the cancellation of:

- ☒ the description, pages NONE
- ☒ the claims, Nos. NONE
- ☒ the drawings, sheets/fig. NONE

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.  
PCT/US03/28360**V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. STATEMENT**

Novelty (N)	/ Claims <u>1-27</u>	YES
	Claims <u>NONE</u>	NO
Inventive Step (IS)	/ Claims <u>1-27</u>	YES
	Claims <u>NONE</u>	NO
Industrial Applicability (IA)	/ Claims <u>1-27</u>	YES
	Claims <u>NONE</u>	NO

**2. CITATIONS AND EXPLANATIONS**

/ Claims 1-27 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest:

Regarding claim 1, the prior art does not teach or fairly suggest:

status means within said UE for determining, subsequent to the flushing of said reordering buffer, the status of PDUs received by the UE, and for generating a status report based upon said determination.

Regarding claim 12, the prior art does not teach or fairly suggest:

resetting, at said UE, including flushing of said at least one reordering buffer;  
determining, subsequent to the resetting step, the status of PDUs received at the UE;  
generating a status report based upon said determination.

Regarding claim 23, because the prior art does not teach or fairly suggest:

Means for detecting a reset indication and for flushing said at least one reordering buffer in response to said reset indication;

status means for determining, subsequent to flushing of said reordering buffer, the status of data received by the UE;  
means for generating a status report based upon said determination.

----- NEW CITATIONS -----

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## CLAIMS

What is claimed is:

1. A system for efficient recovery of Node B buffered data, the system including a radio network controller (RNC) associated with at least one Node B, said at least Node B being further associated with at least one User Equipment (UE) having at least one reordering buffer for buffering Packet Data Units (PDUs) sent from the RNC, the system comprising:

the RNC for generating a MAC layer reset notification;

a control unit within said UE for receiving said notification and for flushing said at least one reordering buffer;

status means within said UE for determining, subsequent to the flushing of said reordering buffer, the status of PDUs received by the UE, and for generating a status report based upon said determination; and

transmission means for transmitting said status report to said RNC.

2. The system of claim 1, wherein the status means performs said determination in response to a control signal which indicates that the reordering buffer has been flushed of all PDUs.

3. The system of claim 2, wherein said control signal is an end-of-PDU indication which is generated when all of the PDUs in the buffer have been flushed.

4. The system of claim 2, wherein the last PDU in the buffer is unique, and said control signal comprises the last PDU.

5. The system of claim 2, wherein the last PDU in the buffer includes a special indicator, and said control signal comprises said special indicator.

6. The system of claim 2, wherein the control unit generates said control signal when the reordering buffer has been flushed of all PDUs.

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7. The system of claim 1, whereby the RNC halts data transmissions upon generation of the MAC layer reset notification.

8. The system of claim 7, whereby the RNC restarts data transmissions upon receipt of said status report.

9. The system of claim 7, whereby the RNC restarts data transmissions upon receipt of a predetermined trigger.

10. The system of claim 9, whereby said predetermined trigger is the receipt of said status report.

11. The system of claim 9, whereby the UE generates an in-sync indication and said predetermined trigger is the receipt of said in-sync indication.

12. A method for high speed-downlink shared channel (HS-DSCH) cell change in a system having a remote network controller (RNC) coupled to at least one Node B, which is further coupled to at least one User Equipment (UE) having at least one reordering buffer for buffering Packet Data Units (PDUs) sent from the RNC, the method comprising:

detecting at the RNC the need for an HS-DSCH cell change;

notifying the UE to perform a reset;

resetting, at said UE, including flushing of said at least one reordering buffer;

determining, subsequent to the resetting step, the status of PDUs received at the UE;

generating a status report based upon said determination; and

transmitting from the UE to the RNC said status report.

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13. The method of claim 12, wherein said determining step is performed in response to a control signal which indicates that said at least one reordering buffer has been flushed of all PDUs.

14. The method of claim 13, wherein said control signal is an end-of-PDU indication which is generated when all of the PDUs in said at least one reordering buffer have been flushed.

15. The method of claim 13, wherein the last PDU in said at least one reordering buffer is unique, and said control signal comprises the last PDU.

16. The method of claim 13, wherein the last PDU in said at least one reordering buffer includes a special indicator, and said control signal comprises said special indicator.

17. The method of claim 13, further including generating said control signal when the reordering buffer has been flushed of all PDUs.

18. The method of claim 12, further including halting data transmissions upon said detection.

19. The method of claim 18, further including restarting data transmissions upon receipt of said status report.

20. The method of claim 18, further including restarting data transmissions upon receipt of a predetermined trigger.

21. The method of claim 20, whereby said predetermined trigger is the receipt of said status report.

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22. The method of claim 20, further including generating at the UE an in-sync indication and said predetermined trigger is the receipt of said in-sync indication.

23. A User Equipment (UE) which facilitates high speed-downlink shared channel (HS-DSCH) cell change from a source cell to a target cell, the UE including at least one reordering buffer for buffering Packet Data Units (PDUs) received by the UE, the UE comprising:

means for detecting a reset indication and for flushing said at least one reordering buffer in response to said reset indication;

status means for determining, subsequent to flushing of said reordering buffer, the status of data received by the UE;

means for generating a status report based upon said determination;

and

means for transmitting said data status report.

24. The UE of claim 23, wherein the status means performs said determination in response to a control signal which indicates that the reordering buffer has been flushed of all PDUs.

25. The UE of claim 24, wherein said control signal is an end-of-PDU indication which is generated when all of the PDUs in the reordering buffer have been flushed.

26. The UE of claim 24, wherein the last PDU in the reordering buffer is unique, and said control signal comprises the last PDU.

27. The UE of claim 24, wherein the last PDU in the reordering buffer includes a special indicator, and said control signal comprises said special indicator.



PTO/SB/21 (04-04)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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**TRANSMITTAL  
FORM**

(to be used for all correspondence after initial filing)

Application Number	10/616,331
Filing Date	July 9, 2003
First Named Inventor	Terry et al.
Art Unit	2681
Examiner Name	Not Yet Known
Attorney Docket Number	I-2-0409.1US

Total Number of Pages in This Submission

**ENCLOSURES (Check all that apply)**

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> Fee Transmittal Form<br><input type="checkbox"/> Fee Attached<br><input type="checkbox"/> Amendment/Reply<br><input type="checkbox"/> After Final<br><input type="checkbox"/> Affidavits/declaration(s)<br><input type="checkbox"/> Extension of Time Request<br><input type="checkbox"/> Express Abandonment Request<br><input type="checkbox"/> Information Disclosure Statement<br><input type="checkbox"/> Certified Copy of Priority Document(s)<br><input type="checkbox"/> Response to Missing Parts/Incomplete Application<br><input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53 | <input type="checkbox"/> Drawing(s)<br><input type="checkbox"/> Licensing-related Papers<br><input type="checkbox"/> Petition<br><input type="checkbox"/> Petition to Convert to a Provisional Application<br><input type="checkbox"/> Power of Attorney, Revocation<br><input type="checkbox"/> Change of Correspondence Address<br><input type="checkbox"/> Terminal Disclaimer<br><input type="checkbox"/> Request for Refund<br><input type="checkbox"/> CD, Number of CD(s) _____ | <input type="checkbox"/> After Allowance communication to Technology Center (TC)<br><input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences<br><input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)<br><input type="checkbox"/> Proprietary Information<br><input type="checkbox"/> Status Letter<br><input checked="" type="checkbox"/> Other Enclosure(s) (please Identify below):<br>Communication Re Favorable IPER By IPEA/US in Corresponding International Application |
|---|--|--|

Remarks

**SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT**

Firm or Individual name	Gerald B. Halt, Jr. Volpe and Koenig, P.C.	Reg. No. 37,633
Signature		
Date	7/16/04	

**CERTIFICATE OF TRANSMISSION/MAILING**

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.

Typed or printed name	Gerald B. Halt, Jr.		
Signature		Date	7/16/04

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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